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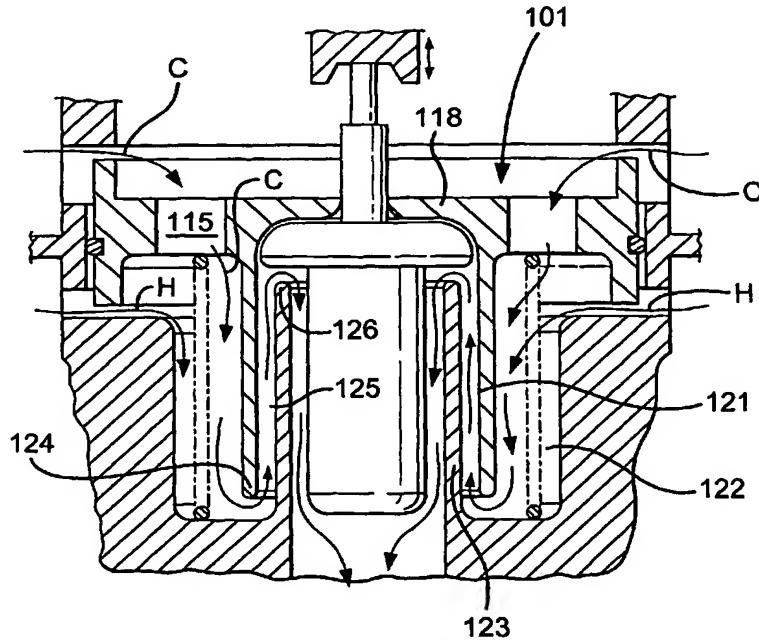
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(54) Title: FLOW MIXER SHUTTLE



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(57) Abstract: A flow mixer shuttle (101) having first and second annular rims (11,12) for controlling the flow of hot and cold water, a central hub (118) connected to the rims, a seat on the hub for supporting a thermostatic capsule for controlling the position of the shuttle (101) to control the flow of hot and cold water, and a flow directing sleeve (121) for directing mixer flow to the flange end of the capsule. A flow mixer incorporating the shuttle is also described, as is a single control flow mixer.

INTERNATIONAL SEARCH REPORT

Intern Application No
PCT/GB 03/00043

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G05D23/13

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G05D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	EP 1 246 039 A (HANSGROHE AG) 2 October 2002 (2002-10-02) column 5, line 38-55; figure 1 ---	1
A, P	GB 2 096 274 A (THE HORNE ENGINEERING CO.) 13 October 1982 (1982-10-13) page 1, line 71-121; figure 1 ---	2-7
A	US 5 148 976 A (W. REID) 22 September 1992 (1992-09-22) column 3, line 40-65; figure 2 ---	1, 3
A		1

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 1246039	A 02-10-2002	DE EP	10115641 A1 1246039 A2	02-10-2002 02-10-2002
GB 2096274	A 13-10-1982	NONE		
US 5148976	A 22-09-1992	NONE		